

Ship 07/28

Work Order ID 163192

Thursday, June 22, 2017 2:38:47 PM

RH

163192

Page 1

Item ID: D119-646-143

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Start Date: 7/3/2017 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 7/24/2017 Req'd Qty: 1.00 *1*

Customer:

Reference: SCHEDULED/ SHIP 07/28

Approvals: Process Plan:

Date: JUN 22 2017

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D3905-043

E

IIN-D119-646

D

100

Document Control

0.00

100

DC

Doc. Control - USB or Paperwork

Memo

0.00

Photocopy bluefile & type labels per PPP D119-646-143
CHG 005

DAS
27
9-89

SEP 18 2017

110

0.00

110

Skidtubes

Skidtubes

Memo

0.00

1- Inspect Mat'l D2500-1-190 for damage

2- Ensure squareness of ends

1 & 17-06-26
D-1

B163192RH

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Misabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER :							
Misidentified ☐	☐ Past Due								

Work Order ID 163192

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Thursday, June 22, 2017 2:38:47 PM

Item ID: D119-646-143 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH
 Start Date: 7/3/2017 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 7/24/2017 Req'd Qty: 1.00 *1* Customer:
 Reference: SCHEDULED/ SHIP 07/28

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	Chemical Conversion Coat per QSI005 4.1	0.00				1	8	17-06-26	
120									
HandFinish	Memo	0.74							
Hand Finishing									
130	QC7-Inspect Chemical Conversion Coat	0.00							
130						1	0	17-06-27	
QC	Memo	0.01							
Quality Control									

DAS
18
9-30

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐				

Work Order ID 163192

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Thursday, June 22, 2017 2:38:47 PM

Item ID: D119-646-143 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH
 Start Date: 7/3/2017 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 7/24/2017 Req'd Qty: 1.00 *1* Customer:
 Reference: SCHEDULED/ SHIP 07/28

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150		0.00							
150									
Skidtubes	Memo	0.00							
Skidtubes	1- Install drill DT9480 drill all x-bolt spacer holes using 3/16 drill first side only.								
	2- 2nd side, locating from first saddle holes use DT9861 A/B to drill 2nd side fwd saddle holes.								
	3- 2nd side locating from fwd saddle drill remaining crossbolt spacer holes usin DT9480								
	4- Scribe batch # inside aft end of tube								
155		0.00							
155									
CNC Bend 1	Memo	1.04							
CNC Delta 100 Bender	1- Bend AFT end of tube using CNC Bender 1 and bend prog. D3905 AFT as per dwg D3905. Must use bending Aid DT9538, located 23.25" from Aft end.								
	2- Esure bending Aid DT9538 is positioned correctly, that the bender set up in on full wide and that the indexing ridge is covered with graphite grease.								

1 2017-06-28
 DIAP

1 M616 17/07/17

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

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Page 4

0.00

QC

Memo

0.02

Quality Control

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER :							
Misidentified ☐	☐ Past Due								

Work Order ID 163192

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Thursday, June 22, 2017 2:38:47 PM

Item ID: D119-646-143 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH
 Start Date: 7/3/2017 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 7/24/2017 Req'd Qty: 1.00 *1* Customer:
 Reference: SCHEDULED/ SHIP 07/28

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180 *180* Skidtubes		0.00							
	Memo	1.20							
	1- Veriffy dimation of bend as per dwg D3905	OK							
	2- Buff out marks left from bending								
	3- Drill Aft Float bag holes using DT9493 as per dwg D3905 detail G and section F-F, spot face most fwd, top facing float bag holes to 0.3125" to accomodate insert (1 per side) open to finished size	0.25							
	4- Drill Aft wearplate and wearpad holes using DT9545 as per dwg D3905 detail H open to finished size								
	5- Open x-bolt spacer holes to finished size as per dwg (sections D-D and E-E) ***DO NOT OPEN FWD SADDLE HOLES***								
	6- Deburr, blow out chips from inside of tube								
	7- Bond web in place as per Dwg D3905 & OSI 015. A/R Sikaflex-291								
	Sikaflex expire date:	M.137127							
	Start:	17-09-20							
	Time:								
	Finish:								
	Time:	11:00							
	***** (Adhere for 12 hours) *****								

1 6 17-09-20
 DX

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Work Order ID 163192

Thursday, June 22, 2017 2:38:47 PM

163192

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Item ID: D119-646-143 **Accept** ***N900040100*** **Setup Start** ***NS1***
Revision ID: **Stop** ***NS2***
Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH
Start Date: 7/3/2017 **Start Qty:** 1.00 ***1*** **Cust Item ID:**
Required Date: 7/24/2017 **Req'd Qty:** 1.00 ***1*** **Customer:**
Reference: SCHEDULED/ SHIP 07/28

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start** ***NR1***
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop** ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC5- Inspect part completeness to step on W/O	0.00							
190									
QC	Memo	0.02							
Quality Control									
200		0.00							
200									
CNC Bend 1	Memo	1.05							
CNC Delta 100 Bender	1- Bend Fwd end of tube using bender 1 and bend prog. D3905 Fwd.Use bending aid DT9544 ensure proper positioning								
	2- Cut Fwd end of tube as per dwg.								
	VERIFY MEASUREMENT BEFORE CUTTING								

JW 17-07-19

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE**DART**
AEROSPACE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 163192***163192***

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Thursday, June 22, 2017 2:38:47 PM

Item ID: D119-646-143

Accept

N9000040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Start Date: 7/3/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 7/24/2017 Req'd Qty: 1.00

1

Customer:

Reference: SCHEDULED/ SHIP 07/28

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center ID
210***210***

Skidtubes

Skidtubes

Operation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

0.00

1.20

Memo

1- Buff out marks left from bending ✓

2- Drill Fwd cap holes using DT8215. ✓

3- Open Fwd saddle holes to finished size as per dwg ✓

4- Drill Fwd x-bolt hole using DT9816 and open to finished size as per dwg. ✓

5- Drill 1.87" and 3.74 holes using DT10045 A&B locate from FWD saddle hole hole. (verify measurement) as per dwg. ✓

6- Drill towing hole and open to finished size using DT10047 locate from fwd saddle hole. ✓

7- Drill wearplate holes using DT9613 and DT9545, open to finished size as per dwg D3905-043 ✓

8- Open FWD & AFT cap holes as dwg. ✓

9- C'sink FWD cap hole as per detail "C" ✓

10- Open float bag holes in section F-F and spot face as per dwg. ✓

11- Deburr, blow out chips from inside of tube. ✓

PTO

17-07-20
DT

DQA: [Signature] Date: 17-10-31

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed [Signature] Date: OCT - 5 2017Work Order update only ☐

Work Order: <u>163192</u> Part No. <u>D119-646-143</u> NCR No. <u>17-6641</u>	DISPOSITION Rework ☒ Scrap ☒ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☒</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>			Skid-tube ☒	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																	
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Large Fab ☐	Composite ☐	Supplier ☐																																																																		
Date: <u>17.02.20</u>	Step #: <u>210</u>	QTY Effective: <u>①</u>	MRB (QS1042) Approval <u>DAS</u> <u>12</u> <u>9-89</u> <u>17/7/20</u>																																																																	
Description Work Order Deviation		Disposition		Completed By/																																																																
<u>fund ground handling hole are drill at 7" from the end, should be at 1.87"</u> <u>R.C. operator install drill jig in wrong hole</u>		<u>Plug / weld holes.</u> <u>Acceptable direction, heat effected zone sufficiently distant from actual hole locations</u>		<u>BE 17.07.20</u>																																																																
				Lead'hand / Supervisor Approval Verification <u>[Signature]</u> <u>17.07.20</u>																																																																
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Work Order ID 163192

Thursday, June 22, 2017 2:38:47 PM

163192

Page 8

Item ID: D119-646-143**Accept*****N900040100*****Setup Start *NS1*****Revision ID:****Stop *NS2*****Item Name:** AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LII or RH**Start Date:** 7/3/2017 **Start Qty:** 1.00 ***1*****Cust Item ID:****Required Date:** 7/24/2017 **Req'd Qty:** 1.00 ***1*****Customer:****Reference:** SCHEDULED/ SHIP 07/28

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run Start *NR1*
Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	QC5- Inspect part completeness to step on W/O	0.00							
220									
QC									
Quality Control	Memo	0.02				1	0	17-07-20	BE

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																																													
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Work Order ID 163192

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Item ID: D119-646-143

Revision ID:

Accept

N900040100Setup Start ***NS1***

Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Stop ***NS2***

Start Date: 7/3/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 7/24/2017 Req'd Qty: 1.00

1

Customer:

Reference: SCHEDULED/ SHIP 07/28

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

224

0.00

224

Skidtubes

0.00

Skidtubes

Memo

NOTE: TACK IN 2 MOST FWD X-BOLT SPACERS AND TEST FIT FWD
GROUND HANDLING FIXTURE, IF FIXTURE FITS WELL THEN
PROCEED. FIXTURE DT10091.

1- Countersink x-bolt holes as per dwg

2- Remove alodine prepare for welding

3- Insert x-bolt spacers

4- Weld x-bolt spacer as per dwg

A/R Alum rod Batch: **MB7133**

5- Grind welds flush as per dwg

6- Counter bore x-bolt holes as per dwg

7- Deburr

8- Pick D2855-5 cap and transfer drill missing hole. Deburr and identify cap
with skidtube batch#.**8617-0721****17-07-24****17-07-24**
DI

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only ☐

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																																													
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Work Order ID 163192

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Item ID: D119-646-143

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Start Date: 7/3/2017 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 7/24/2017 Req'd Qty: 1.00 *1*

Customer:

Reference: SCHEDULED/ SHIP 07/28

Approvals:

Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
225 *225* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo TEST FIT USING FIXTURE DT10091.	0.00 0.02				1			EB 17-07-24
226 *226* QC Quality Control	QC10- Inspect visual per QSI004- ground welds Memo	0.00 0.00				1			EB 17-07-24
227 *227* HandFinish Hand Finishing	Pressure Wash per QSI005 4.3 Memo AND REALODINE AS PER PAR09-043	0.00 1.26				1			17-07-24 JL

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			Completed By
					Lead hand / Supervisor Approval Verification
					QC / QA Coordinator Approval
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order ID 163192

163192

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Item ID: D119-646-143 **Accept** ***N900040100*** **Setup** **Start** ***NS1***
Revision ID: **Stop** ***NS2***
Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH
Start Date: 7/3/2017 **Start Qty:** 1.00 ***1*** **Cust Item ID:**
Required Date: 7/24/2017 **Req'd Qty:** 1.00 ***1*** **Customer:**
Reference: SCHEDULED/ SHIP 07/28

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run** **Start** ***NR1***
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop** ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240		0.00							
240									DAS
SprayPaint	Memo	0.00							41
Spray Painting	*****AS PER DETAIL "F" NOTE 8, SHEET 8 MASK THIS AREA, DO NOT APPLY PRIMER OR PAINT*****								9-89
	PRIME AS PER DWG AND QSI 005 4.2 BATCH: <u>137855</u>								
	PAINT WHITE AS PER DWG AND QSI 005 4.2 BATCH: <u>137852</u>								
245	QC14- Inspect Spray Paint	0.00							
245									
QC	Memo	0.01							
Quality Control									

JUL 24 2017

lx d ll 17/09/12 **DAS**
15
9-89

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By																																																									
								Lead hand / Supervisor Approval Verification																																																									
								QC / QA Coordinator Approval																																																									
								Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 163192

163192

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Page 12

Item ID: D119-646-143 **Accept** ***N900040100*** **Setup Start *NS1***
Revision ID: **Stop *NS2***
Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH
Start Date: 7/3/2017 **Start Qty:** 1.00 ***1*** **Cust Item ID:**
Required Date: 7/24/2017 **Req'd Qty:** 1.00 ***1*** **Customer:**
Reference: SCHEDULED/ SHIP 07/28

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start *NR1***
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop *NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250		0.00							
250									
HandFinish	Memo	1.27							
Hand Finishing	1-Install inserts as per Dwg D3905.								
260		0.00							
260									
QC	QC5- Inspect part completeness to step on W/O	0.02							
Quality Control	Memo								

16 24 17/09/12
 10 1709-12 258

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐				FAULT CATEGORY Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
OTHER : ☐									

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Item ID: D119-646-143

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Start Date: 7/3/2017 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 7/24/2017 Req'd Qty: 1.00 ***1***

Customer:

Reference: SCHEDULED/ SHIP 07/28

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270		0.00							
270 HandFinish Hand Finishing	Memo 1-Install wearpads, gaskets and wearplates as per Dwg D3905. Put sikaflex in insert before installing bolts and washers A/R Sikaflex-240/-291 <u>M137546</u> Sikaflex expire date: <u>18102</u> 2- install plugs assembly with o-ring lube as per dwg. A/R o-ring lube 55 Batch: <u>M125477</u> 3 -Inspect for foreign objects as per QSI 024 4 -Install D2855-3 Cap and seal with Sikaflex. Clean excess adhesive. A/R Sikaflex-240/-291 <u>M137546</u> Sikaflex expire date: <u>18102</u> 5 -Install insert in D2855- Cap. Install cap and seal with Sikaflex. Clean excess adhesive. A/R Sikaflex-240/-291 <u>M137546</u> Sikaflex expire date: <u>18102</u> 6- Wing Walk as per dwg QSI005 4.4 Batch: <u>M137546</u> 7- Install (2)D5101-041 and (1)D5101-047 as per dwg by using DT10117	1.90							

IRH d Jell 6/20/17

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval																																																							
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	No Re-verification ☐	Operator ☐	Offset/Setup ☐	Supplier ☐	Training ☐	Use for Testing ☐	Poor Information ☐	Rushing ☐	Product Improvement ☐	Process Improvement ☐	Manufacturing Process ☐	Past Due ☐	Pressure/Forced ☐	Bending ☐	Centre Not Concentric ☐	Cracks ☐	Crimp/Kink/Ripple/Wave ☐	Cuffs ☐	Crushing ☐	Heat Treat ☐	Wave/Twist in Tube ☐	Marks/Chatter ☐	Temperature/Cure ☐	Set-up ☐	BOM/Route ☐	Broken/Damage/Defect ☐	Inspection Incomplete/Unqualified ☐	Contamination ☐	Countersink ☐	Cut Too Short ☐	Instructions Incomplete/Unclear ☐	Drill Holes ☐	Power Loss/Surge ☐	Folio/Program ☐	Grain ☐	Weld ☐	Wrong Stock Pulled ☐	Out of Sequence ☐	Off-set ☐	Mislabeled ☐	Fit/Function ☐	Misaligned/off center ☐	Positioned Wrong ☐	Outside Dimensions ☐	Over/Under tolerance ☐	Part Incorrect ☐	Part Lost/Missing ☐	Part Moved ☐	Drawing ☐	Finish ☐	Misread ☐	Turning Sequence ☐
																						OTHER : ☐																																									

Work Order ID 163192

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Item ID: D119-646-143 **Accept** ***N900040100*** **Setup Start** ***NS1***
Revision ID: **Stop** ***NS2***
Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH
Start Date: 7/3/2017 **Start Qty:** 1.00 ***1*** **Cust Item ID:**
Required Date: 7/24/2017 **Req'd Qty:** 1.00 ***1*** **Customer:**
Reference: SCHEDULED/ SHIP 07/28

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start** ***NR1***
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop** ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
280	QC5- Inspect part completeness to step on W/O	0.00							
280									
QC	Memo	0.02						SEP 18 2017	DAS 18 9-89
Quality Control									
290	Identify as per dwg & Stock Location: _____	0.00							
290									
Packaging	Memo	0.01							DAS 27 9-89
Packaging									SEP 18 2017
300	QC21- Final Inspection - Work Order Release	0.00							
300									
QC	Memo	0.10							17/9/20 J
Quality Control									

DAS 21 9-89
 SEP 19 2017
 DAS 2 9-89
 W

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS					
Part No. _____		Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐		
		Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐		
NCR No. _____		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐		
		Large Fab ☐	Composite ☐	Supplier ☐			

Date : _____	Step #: _____	QTY Effective : _____	MRB (QSI042) Approval
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Description Work Order Deviation	Disposition	Completed By
		Lead hand / Supervisor Approval Verification
		QC / QA Coordinator Approval

Root Cause				FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐		
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐		
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐		
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐		
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐		
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐		
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐		
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐		
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐		
Past Expiry Date ☐	Manufacturing Process ☐						
Misidentified ☐	Past Due ☐	OTHER : _____					

Picklist Print

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Work Order ID: 163192

163192

Parent Item: . D119-646-143

D119-646-143

Parent Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Start Date: 7/3/2017

Required Date: 7/24/2017

Comments:

IPP RevA: New issue DD verified by:EC
 12.11.05 (DEOD3905-B-1)(ecn 12-675) DD verf:JLM IPP REV:C 13.03.20
 per chg003 ECN13-534 DD verf:JLM IPP REV:D 15.01.19 AS PER ECN-
 14-628 DD verf:JLM IPP REV:E 16.11.02 chg as per D3905
 revD(DEO) DD verf:JLM IPP REV:F 17.05.19 as per dwg D3905 rev.e DD
 verf:JFS

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
ALS4-1032-225	AELS8-1032-225	Purchased	No			270	Each	2,629.000	1	1			
AI S4-1032-225										**		12/09/12	
Rivnut													

Location	Loc Qty	Loc Code
FG	25	
M134975	20	
M135998	5	
FP001	2204	
M135603	40	
M135920	38	
M135998	2115	X1
M136265	11	
ST556	400	
M136579	400	

AN4C46A

Purchased

No

270

Each

218.0000

3

3

AN4C46A

Bolt

**

Location	Loc Qty	Loc Code
FG	8	
123642	2	
m132169	6	
OVER002	100	
m137316	100	
ST341	110	
m137316	110	X3

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																							
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	No Re-verification ☐	Operator ☐	Offset/Setup ☐	Supplier ☐	Training ☐	Use for Testing ☐	Poor Information ☐	Rushing ☐	Product Improvement ☐	Process Improvement ☐	Manufacturing Process ☐	Past Due ☐	Pressure/Forced ☐	Bending ☐	Centre Not Concentric ☐	Cracks ☐	Crimp/Kink/Ripple/Wave ☐	Cuffs ☐	Crushing ☐	Heat Treat ☐	Wave/Twist in Tube ☐	Marks/Chatter ☐	Temperature/Cure ☐	Set-up ☐	BOM/Route ☐	Broken/Damage/Defect ☐	Inspection Incomplete/Unqualified ☐	Contamination ☐	Countersink ☐	Cut Too Short ☐	Instructions Incomplete/Unclear ☐	Drill Holes ☐	Power Loss/Surge ☐	Folio/Program ☐	Grain ☐	Weld ☐	Wrong Stock Pulled ☐	Out of Sequence ☐	Off-set ☐	Mislabeled ☐	Fit/Function ☐	Misaligned/off center ☐	Positioned Wrong ☐	Outside Dimensions ☐	Over/Under tolerance ☐	Part Incorrect ☐	Part Lost/Missing ☐	Part Moved ☐	Drawing ☐	Finish ☐	Misread ☐	Turning Sequence ☐
																								OTHER : ☐																																							

Picklist Print

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Work Order ID: 163192

163192

Parent Item: D119-646-143

D119-646-143

Parent Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Start Date: 7/3/2017

Required Date: 7/24/2017

D2855-5

Manufactured No

224 Each

12.0000 1 1

Required Qty: 1.00

D2855-5

Cap

**

17-08-24

029

Location

Loc Qty

Loc Code

LG002

12

162208

12

D5101-041

Manufactured No

270 Each

45.0000 2 2

D5101-041

Crossbolt Spacer Assembly

**

all 12/09/12

Location

Loc Qty

Loc Code

FP001

45

137417

1

139261

2

140171

18

143449

12

159549

12

XZ

D5101-047

Manufactured No

270 Each

5.0000 1 1

D5101-047

Crossbolt Spacer Assembly

**

all 12/09/12

Location

Loc Qty

Loc Code

FP001

5

144975

5

B161593

KL

D5101-3

Manufactured No

270 Each

152.0000 6 6

D5101-3

Insert

**

all 12/09/12

Location

Loc Qty

Loc Code

FP001

152

127964

10

135947

4

141362

25

154094

24

158939

89

XLO

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Shop Packet Print

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval				
Description Work Order Deviation				Disposition				Completed By			
								Lead hand / Supervisor Approval Verification			
								QC / QA Coordinator Approval			
Root Cause				FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
OTHER : _____											

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Page 3

Work Order ID: 163192

163192

Parent Item: D119-646-143

D119-646-143

Parent Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Start Date: 7/3/2017

Required Date: 7/24/2017

D5101-5

Manufactured No

270 Each

Start Qty: 1.00
145.0000 6 6

Required Qty: 1.00

D5101-5

Insert

**

all 12/05/12

Location

Loc Qty

Loc Code

FP001

145

127965

6

135948

6

143389

9

153084

24

158796

100

x6

MS21043-4

Purchased No

270 Each

750.0000 3 3

MS21043-4

Nut

**

all 12/05/12

Location

Loc Qty

Loc Code

FG

40

104603

40

GA

99

m132803

5

m137371

94

OVER007

300

m137886

300

ST302

311

m137361

111

m137371

200

x3

NAS1149D0416J

Purchased No

270 Each

3,496.000 6 6

NAS1149D0416.J

WASHER

**

all 12/05/12

Location

Loc Qty

Loc Code

GA

610

m131511

610

ST264

2886

m131511

2886

x6

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Page 3

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Picklist Print

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Page 4

Work Order ID: 163192

163192

Parent Item: D119-646-143

D119-646-143

Parent Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Start Date: 7/3/2017

Required Date: 7/24/2017

D2500-1-190

Manufactured No

110 Each

Start Qty: 1.00
108.0000 1 1

Required Qty: 1.00

D2500-1-190

Ext'n - I Beam Tube 4"

**

17-06-20
D.

Location

Loc Qty

Loc Code

HALL

18

151612

18

LG002

90

159717

90

1

D2579

Manufactured No

190 Each

110.0000 2 2

D2579

Crossbolt Spacer

**

BE 17-07-20

Location

Loc Qty

Loc Code

LG001

110

141711

4

162087

106

2

D2855-3

Manufactured No

270 Each

4.0000 1 1

D2855-3

Cap

**

all 12/09/12

Location

Loc Qty

Loc Code

FP001

4

151614

3

153291

1

Y1

~~XID 2855-3 / B158077 ext all 12/09/12~~

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

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Work Order ID: 163192

163192

Parent Item: D119-646-143

D119-646-143

Parent Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Start Date: 7/3/2017

Required Date: 7/24/2017

D3492-5

Manufactured No

270

Each

Start Qty: 1.00
302.0000 16 16

Required Qty: 1.00

D3492-5

Plug

**

all 12/09/12

Location

Loc Qty

Loc Code

FP001

302

B164331?

133396

21

x12

155493

5

157341

38

161682

43

162345

135

x115

162820

60

NAS1611-005

Purchased No

270

Each

382.0000 16 16

NAS1611-005

O-RING

**

all 12/09/12

Location

Loc Qty

Loc Code

FP001

382

m136184

7

m136192

1

m136377

22

m137017

100

m137164

52

m137710

42

m137769

158

x16

D3672-1

Manufactured No

270

Each

356.0000 2 2

D3672-1

Washer, Phenolic

**

all 12/09/12

Location

Loc Qty

Loc Code

FG

10

85222

10

FP001

346

150074

346

x2

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Page 5

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER :					

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Work Order ID: 163192

163192

Parent Item: D119-646-143

D119-646-143

Parent Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Start Date: 7/3/2017

Required Date: 7/24/2017

D3681-1 Manufactured No

190 Each

Start Qty: 1.00
167.0000 8 8

Required Qty: 1.00

D3681-1

Spacer

**

BE 170720

Location

Loc Qty

Loc Code

LG001

167

160402

167

8

D3847-1 Manufactured No

270 Each

56.0000 8 8

D3847-1

Wearpad

**

all 12/09/12

Location

Loc Qty

Loc Code

FP001

56

153503

15

155281

5

156958

4

161945

10

161946

10

161947

12

B163055

X8

D3847-11 Manufactured No

270 Each

19.0000 1 1

D3847-11

Wearpad

**

all 12/09/12

Location

Loc Qty

Loc Code

FP001

19

151986

1

155829

6

159114

8

162014

4

X1

D3847-043 Manufactured No

270 Each

4.0000 1 1

D3847-043

Wearplate Fwd

**

all 12/09/12

Location

Loc Qty

Loc Code

FP002

4

153533

4

X1

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Shop Packet Print

Page 6

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Picklist Print

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Work Order ID: 163192

163192

Parent Item: D119-646-143

D119-646-143

Parent Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Start Date: 7/3/2017

Required Date: 7/24/2017

D3847-045

Manufactured No

270

Each

2.0000

Start Qty: 1.00

Required Qty: 1.00

D3847-045

Wearplate Center

**

all 12/09/17

Location

Loc Qty

Loc Code

FP002

2

153474

2

B163319

xc

D3847-049

Manufactured No

270

Each

10.0000

1

1

D3847-049

Aft Wearplate Assembly, Float Gear

**

all 12/09/17

Location

Loc Qty

Loc Code

FP002

10

139750

10

xl

D3885-3

Manufactured No

170

Each

11.0000

1

1

D3885-3

Float Web

**

17-02-18

Location

Loc Qty

Loc Code

LG002

11

140548

1

154332

10

1

D3903-1

Manufactured No

190

Each

140.0000

12

12

D3903-1

Spacer

**

8C170720

Location

Loc Qty

Loc Code

LG001

140

152993

1

157542

11

162344

80

162888

48

12

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Page 7

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐				
Date :	Step #:	QTY Effective :	MRB (QSI042) Approval			
Description Work Order Deviation		Disposition		Completed By		
				Lead hand / Supervisor Approval Verification		
				QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY				
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
OTHER : ☐						

Picklist Print

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Work Order ID: 163192

163192

Parent Item: D119-646-143

D119-646-143

Parent Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Start Date: 7/3/2017

Required Date: 7/24/2017

ALS4-1032-130

AELS4-1032-130 Purchased

No

250

Each

Start Qty: 1.00
7,436.000 42 42

Required Qty: 1.00

ALS4-1032-130

Rivnut

**

288 12/09/12

Location

Loc Qty

Loc Code

CCK004

5000

M133077

0

M137820

5000

x42

FG

100

FG

M135442

50

M136579

50

FP001

2175

M133077

3

M136579

2172

st555

161

M136579

161

AN3C5A

Purchased

No

270

Each

928.0000 44 44

AN3C5A

Bolt

**

288 12/09/12

Location

Loc Qty

Loc Code

FG

5

122800

5

M137463

x44

FP001

657

M137361

657

OVER002

200

M137710

200

ST350

66

M135442

66

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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐							
Misidentified ☐	Past Due ☐								

Picklist Print

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Work Order ID: 163192

163192

Parent Item: D119-646-143

D119-646-143

Parent Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Start Date: 7/3/2017

Required Date: 7/24/2017

NAS1149C0332R

Purchased

No

270

Each

Start Qty: 1.00
4,910.000 44 44

Required Qty: 1.00

NAS1149C0332R

WASHER

**

all 12/10/17

Location

Loc Qty

Loc Code

FP001

1470

m137597

1470

GA

508

m133284

22

m136444

486

ST260a

2000

m135408

0

m136741

0

m137851

2000

ST266

932

m137381

932

x41

MS24694-C52

Purchased

No

270

Each

34.0000

2

2

MS24694-C52

SCREW

**

all 12/10/17

Location

Loc Qty

Loc Code

FP001

34

m135978

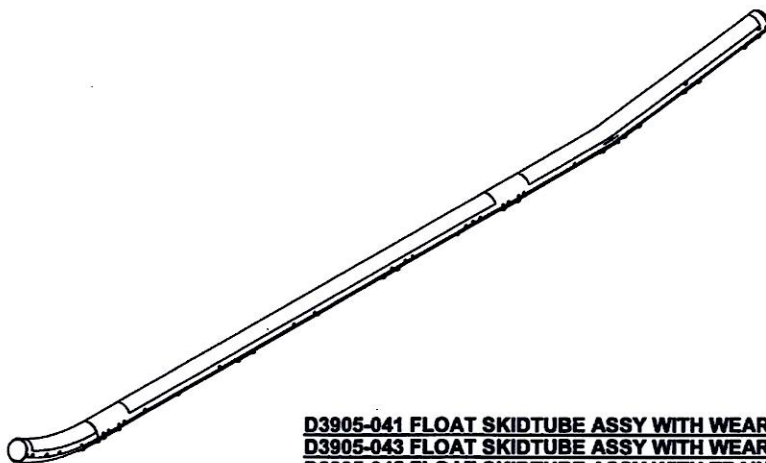
34

x2

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D3905-041 FLOAT SKIDTUBE ASSY WITH WEARPAD (SHOWN)
D3905-043 FLOAT SKIDTUBE ASSY WITH WEARPLATE (SIMILAR)
D3905-045 FLOAT SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)

SHOP COPY
 RETURN TO
 ENGINEERING
 UNCONTROLLED COPY
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER
 NO. 163192

JUN 22 2017

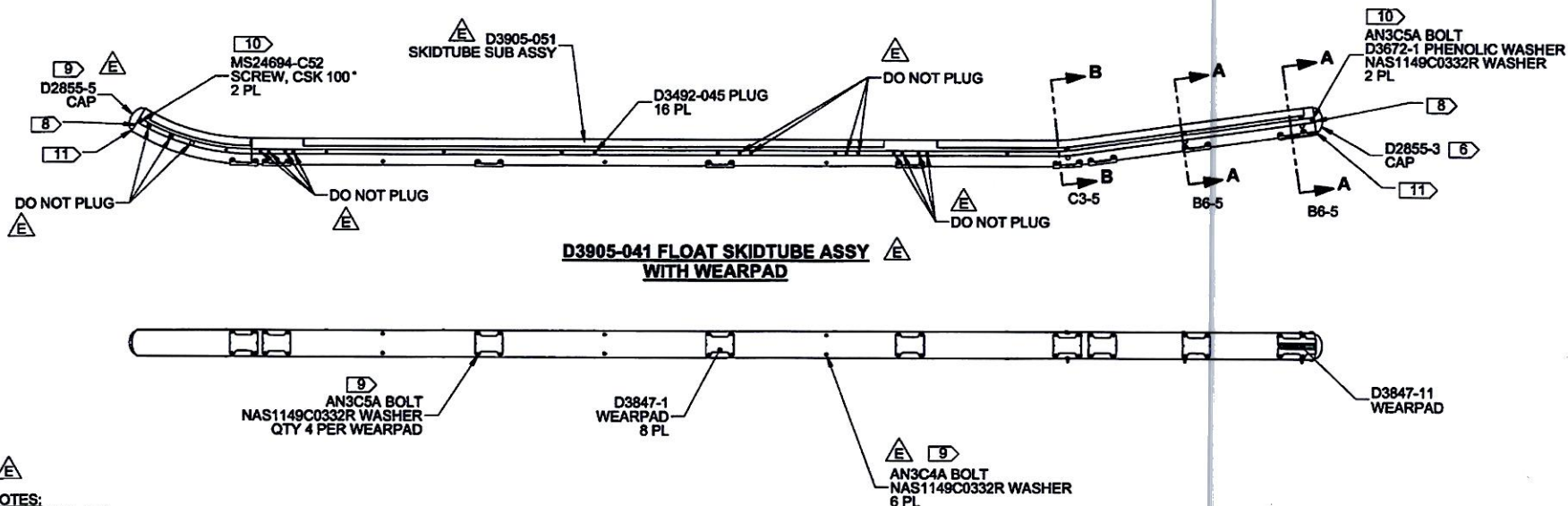
E	COMPLETE REDRAW SEE PREVIOUS REV. AFT FLOAT HOLE NOW Ø0.485 WAS Ø0.437 FINISH REMOVED FROM SADDLE AREA SEE DETAIL F. REF PART15-421 CHANGE QTY OF D2855-3, ADDED D2855-5 CAP ASSEMBLIES, ADDED INSTRUCTIONS TO LOCATE INSERT HOLE FOR D2855-5 CAP. REF PART17-583 ADDED DRILL JIG REF NUMBER. INCR15-5366 INCREASE RIDGE RELIEF FROM 0.060 TO 0.130. REF PART17-574	AJS / WK	17.03.13
D	REVISED DIMENSIONS AND PROVIDED TOLERANCE TO SKIDTUBE OVERALL LENGTH PAGE 5-6 REVISED NOTE 2 AND NOTE 7 PAGE 1 (ZN B8, ZN A8-1) REVISED -0411-043-045 DRAWING VIEWS, REVISED SECTION VIEW F-F (ZN B4-7), REVISED BOM REF. PART13-299 AND PART13-272	AK	14.08.08
C	(SHT 1 P/L ZN C2-2, C2-3, C2-4) ITEM 13, QTY 2 WAS 4, ITEM 42 AND 45, QTY 44 WAS 46, ADD ITEM 48, MS24684- CS2 WAS AN3CSA, D3672-1 AND HAS1148C0332R, (ZN C7-7) Ø0.201 CSK Ø0.395 X 100" WAS Ø0.204 THRU, (ZN A4-5, A4-6) ADD RELIEF INSTRUCTION, ADD ITEM 10, CROSS BOLT SPACER (ZN D4-1, C6-7, D8-7)	DB	13.02.21
B	REVISED PART LIST, ALS4-1032-130 WAS AELS-1032-130 (ZN A8-5, A5-8, C5-7, C5-7, A5-7); ADD DT8832 (ZN A8-1); D2855-3 WAS D2575 (ZN C4-2, C1-2, C5-3, C1-3, C5-4, C1-4); AN3CSA WAS AN3CSA (ZN C7-2, C1-2, C7-3, C1-3, C7-4, C1-4); D3849-047 WAS D3849-041 (ZN B3-4); ADD D3411-3 (ZN B3-4); ADD AN3CSA (ZN B3-4); Ø0.313 WAS Ø0.328 (B2-5, B2-6, C2-7, A8-7 & D7-6), REVISED NOTE 14 (ZN A8-7)	RF	09.06.30
A	NEW ISSUE	RF	09.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS	DART AEROSPACE USA, INC. EUGENE, OR	
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MFG. APPR.	DD	D3905	SHEET 1 OF 14
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ITEM	QTY -041	P/N	DESCRIPTION
	X	D3905-041	SKIDTUBE ASSY
1	1	D2855-3	CAP
2	1	D2855-5	CAP
3	16	D3492-045	PLUG
4	2	D3672-1	PHENOLIC WASHER
5	8	D3847-1	WEARPAD
6	1	D3847-11	WEARPAD
7	1	D3905-051	SKIDTUBE SUB ASSEMBLY
8	2	D5101-041	CROSSBOLT SPACER ASSY
9	1	D5101-047	CROSSBOLT SPACER ASSY
10	6	D5101-3	INSERT
11	6	D5101-5	INSERT

ITEM	QTY -041	P/N	DESCRIPTION
12	1	ALS4-1032-225	INSERT
13	6	AN3C4A	BOLT
14	38	AN3C5A	BOLT
15	3	AN4C46A	BOLT
16	3	MS21043-4	NUT, SELF-LOCKING
17	2	MS24694-C52	SCREW, CSK 100°
18	44	NAS1149C0332R	WASHER
19	6	NAS1149C0416R	WASHER



**D3905-041 FLOAT SKIDTUBE ASSY
WITH WEARPAD**

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3905-041" AND BATCH NUMBER PER QSI 044 6.4 ON THE ID OF THE TUBE, BEFORE INSTALLING THE AFT D2855-3 CAP
- 7) WEIGHT: 35.4 lbs
- 8) RELIEVE INNER RIDGE OF EXTRUSION, AS NEEDED, TO ALLOW FOR INSTALLATION OF D2855-3 AND D2855-5 CAP ASSY, ALODINE BARE MATERIAL
- 9) USE D3905-051 SKIDTUBE ASSY TO LOCATE AND BACKDRILL UNDRILLED INSERT HOLE INTO D2855-5 CAP. OPEN HOLE TO $\varnothing 0.297$. ALODINE BARE MATERIAL AND INSTALL ALS4-1032-225 (OR AKS7-1032-225, OR ALS7-1032-225, OR AKS4-1032-225) INSERT ON INSIDE OF CAP.
- 10) SEAL FASTENERS WITH SIKAFLEX -241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT
- 11) SEAL MATING SURFACES WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT

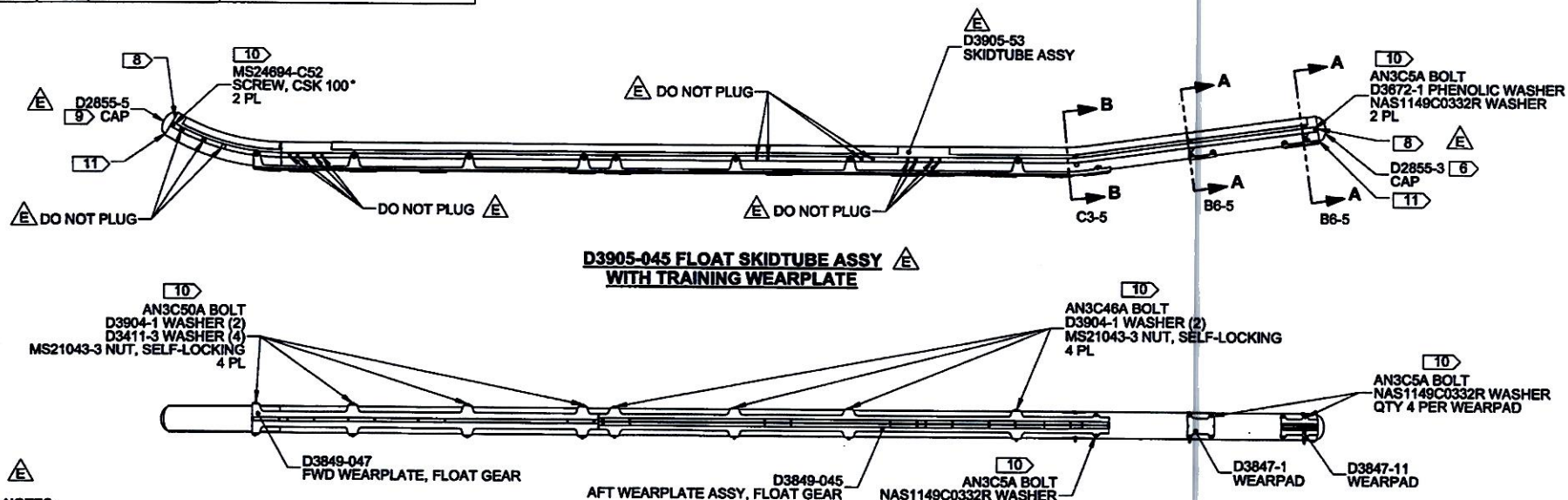
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ITEM	QTY -045	P/N	DESCRIPTION
	X	D3905-045	FLOAT SKIDTUBE ASSY
1	1	D2855-3	CAP
2	1	D2855-5	CAP
3	16	D3411-3	WASHER
4	2	D3672-1	PHENOLIC WASHER
5	1	D3847-1	WEARPAD
6	1	D3847-11	WEARPAD
7	1	D3849-045	AFT WEARPLATE ASSY, FLOAT GEAR
8	1	D3849-047	FWD WEARPLATE, FLOAT GEAR
9	16	D3904-1	WASHER
10	1	D3905-053	SKIDTUBE SUB ASSEMBLY
11	2	D5101-041	CROSSBOLT SPACER ASSY
12	1	D5101-047	CROSS BOLT SPACER
13	6	D5101-3	INSERT
14	6	D5101-5	INSERT

ITEM	QTY -045	P/N	DESCRIPTION
15	1	ALS4-1032-225	INSERT
16	12	AN3C5A	BOLT
17	4	AN3C46A	BOLT
18	4	AN3C50A	BOLT
19	3	AN4C46A	BOLT
20	8	MS21043-3	NUT, SELF-LOCKING
21	3	MS21043-4	NUT, SELF-LOCKING
22	2	MS24694-C52	SCREW, CSK 100"
15	12	NAS1149C0332R	WASHER
24	6	NAS1149D0416J	WASHER



NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3905-045" AND BATCH NUMBER PER QSI 044 6.4 ON THE ID OF THE TUBE, BEFORE INSTALLING THE AFT D2855-3 CAP
- 7) WEIGHT: 48.0 lbs
- 8) RELIEVE INNER RIDGE OF EXTRUSION, AS NEEDED, TO ALLOW FOR INSTALLATION OF D2855-3 AND D2855-5 CAP ASSY, ALODINE BARE MATERIAL
- 9) USE D3905-053 SKIDTUBE ASSY TO LOCATE AND BACKDRILL UNDRILLED INSERT HOLE INTO D2855-5 CAP, OPEN HOLE TO $\phi 0.297$, ALODINE BARE MATERIAL AND INSTALL ALS4-1032-225 (OR AKS7-1032-225, OR ALS7-1032-225, OR AKS4-1032-225) INSERT ON INSIDE OF CAP.
- 10) SEAL FASTENERS WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT
- 11) SEAL MATING SURFACES WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT

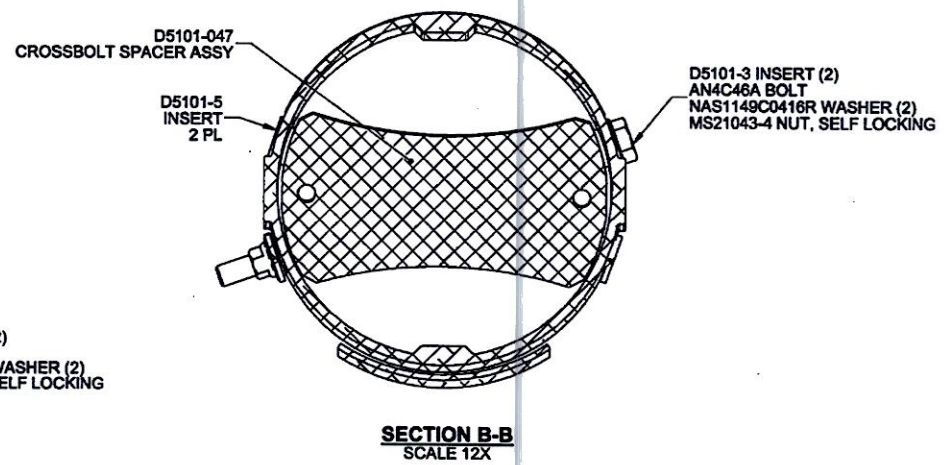
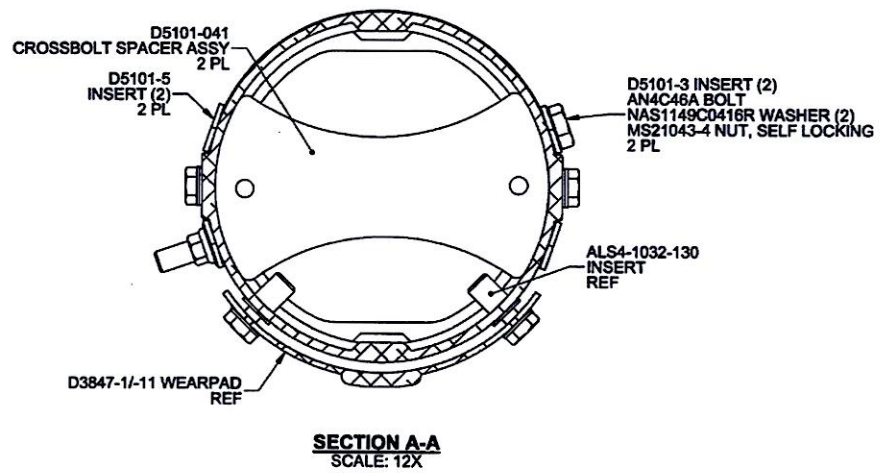
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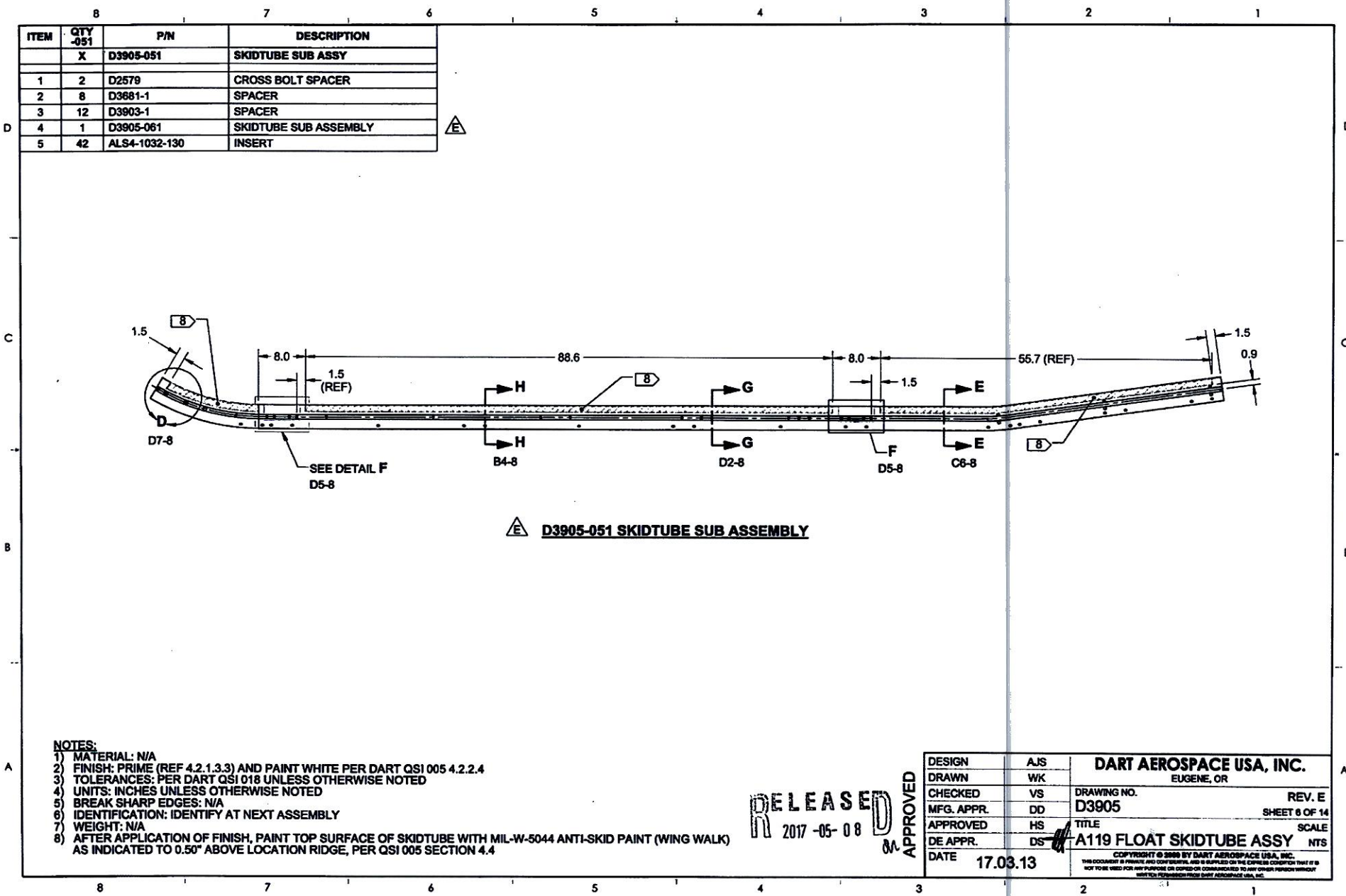


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8 7 6 5 4 3 2 1



ITEM	QTY	P/N	DESCRIPTION
	X	D3905-051	SKIDTUBE SUB ASSY
1	2	D2579	CROSS BOLT SPACER
2	8	D3681-1	SPACER
3	12	D3903-1	SPACER
4	1	D3905-061	SKIDTUBE SUB ASSEMBLY
5	42	ALS4-1032-130	INSERT

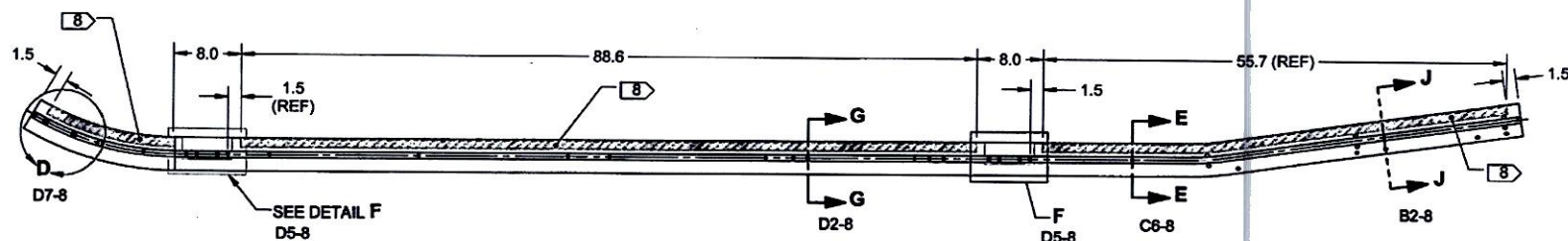
- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: PRIME (REF 4.2.1.3.3) AND PAINT WHITE PER DART QSI 005 4.2.2.4
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: IDENTIFY AT NEXT ASSEMBLY
 - 7) WEIGHT: N/A
 - 8) AFTER APPLICATION OF FINISH, PAINT TOP SURFACE OF SKIDTUBE WITH MIL-W-5044 ANTI-SKID PAINT (WING WALK) AS INDICATED TO 0.50" ABOVE LOCATION RIDGE, PER QSI 005 SECTION 4.4

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ITEM	QTY	P/N	DESCRIPTION
	X	D3905-053	SKIDTUBE SUB ASSY
1	2	D2579	CROSS BOLT SPACER
2	8	D3681-1	SPACER
3	12	D3903-1	SPACER
4	1	D3905-063	SKIDTUBE SUB ASSEMBLY
5	10	ALS4-1032-130	INSERT



D3905-053 SKIDTUBE SUB ASSEMBLY

NOTES:

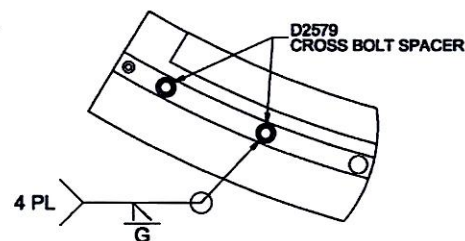
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- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY AT NEXT ASSEMBLY
- 7) WEIGHT: N/A
- 8) AFTER APPLICATION OF FINISH, PAINT TOP SURFACE OF SKIDTUBE WITH MIL-W-5044 ANTI-SKID PAINT (WING WALK) AS INDICATED TO 0.50" ABOVE LOCATION RIDGE, PER QSI 005 SECTION 4.4

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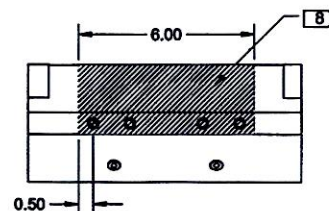
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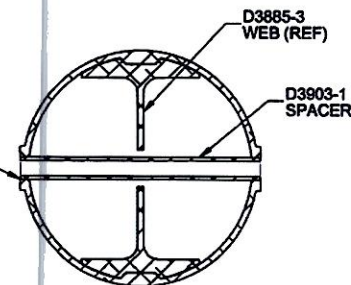
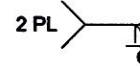
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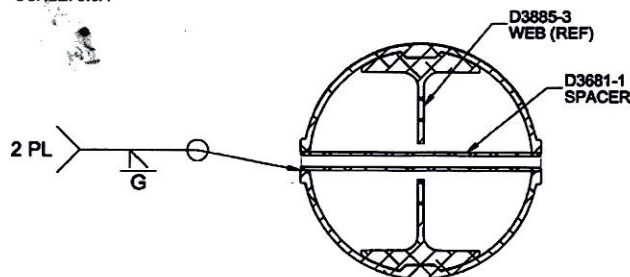
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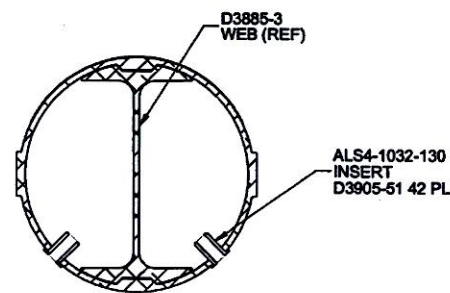
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SCALE: 3.5X



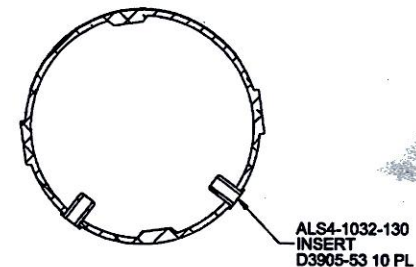
SECTION G-G
SCALE: 7X
12 PL



SECTION E-E
SCALE: 7X
8 PL



SECTION H-H
SCALE: 7X
D3905-51 21 PL



SECTION J-J
SCALE: 7X
D3905-53 5 PL

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: PRIME (REF 4.2.1.3.3) AND PAINT WHITE PER DART QSI 005 4.2.2.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A
- 8) MASK THIS AREA AND DO NOT APPLY PRIMER OR PAINT
- 9) AFTER DRILLING AND BENDING ASSEMBLY, PERFORM THE FOLLOWING FOR THE SECTION G-G $\phi 0.375$ HOLES ONLY:
 - i) CHAMFER HOLES $\phi 0.475 \times 45^\circ$
 - ii) INSERT D3903-1 SPACER
 - iii) WELD INTO PLACE AND GRIND FLUSH
 - iv) C'BORE TO $\phi 0.313 \times 0.75$ DEEP
 - v) DEBURR HOLES
- 10) AFTER DRILLING AND BENDING ASSEMBLY, PERFORM THE FOLLOWING FOR THE SECTION E-E $\phi 0.313$ HOLES ONLY:
 - i) CHAMFER HOLES $\phi 0.354 \times 45^\circ$ OR 0.050 DEEP $\times 45^\circ$ (BOTH SIDES)
 - ii) INSERT D3681-1 SPACER
 - iii) WELD INTO PLACE AND GRIND FLUSH
 - iv) DEBURR HOLES
- 11) WELD PER DART QSI 004

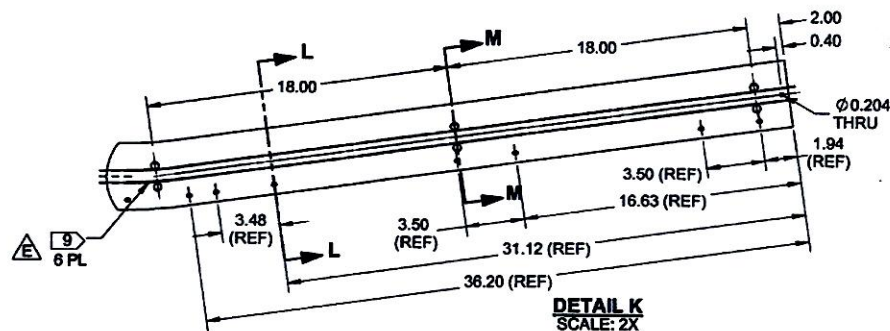
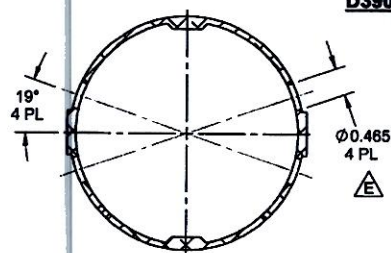
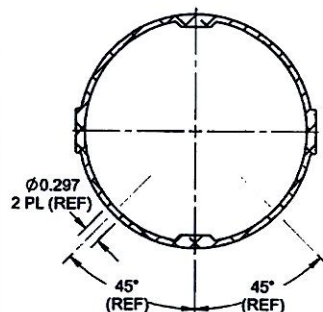
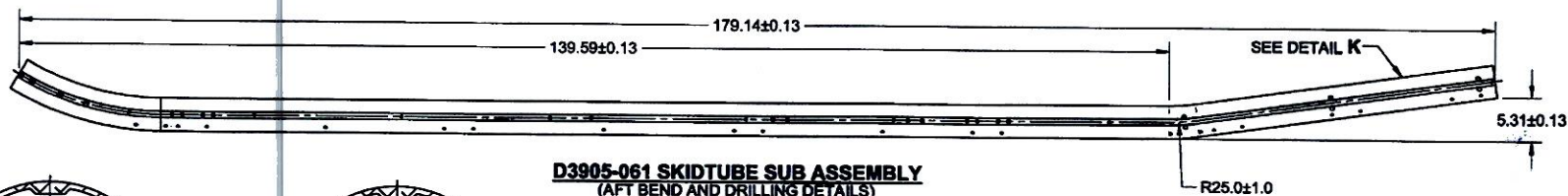
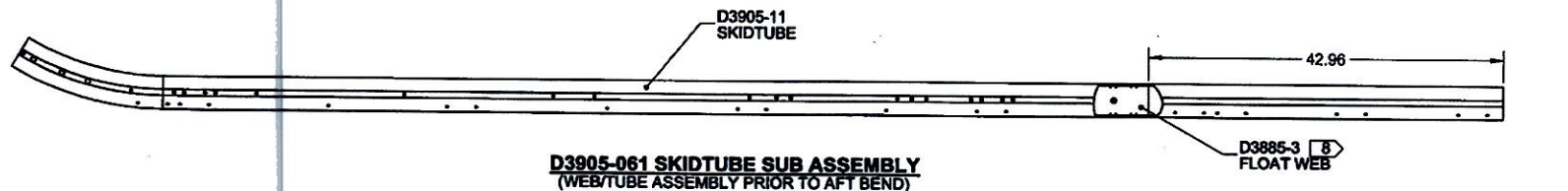
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ITEM	QTY -061	P/N	DESCRIPTION
		D3905-061	SKIDTUBE SUB ASSEMBLY
1	1	D3885-3	FLOAT WEB
2	1	D3905-11	SKIDTUBE



NOTES:

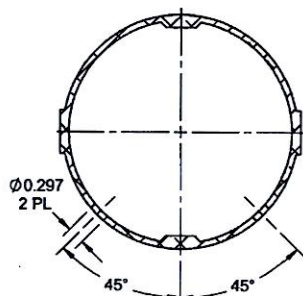
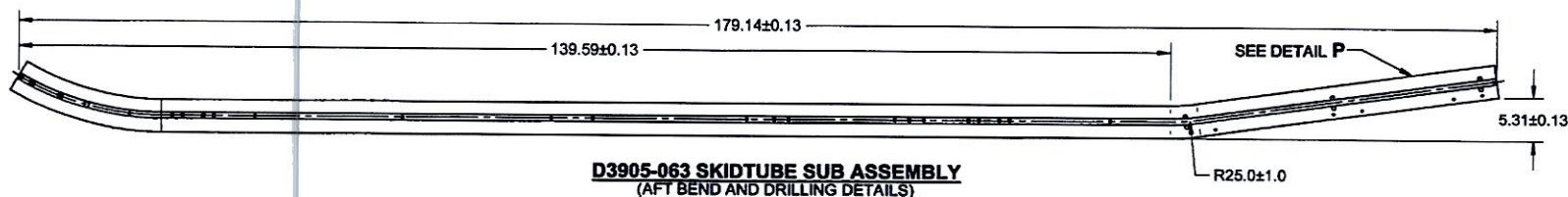
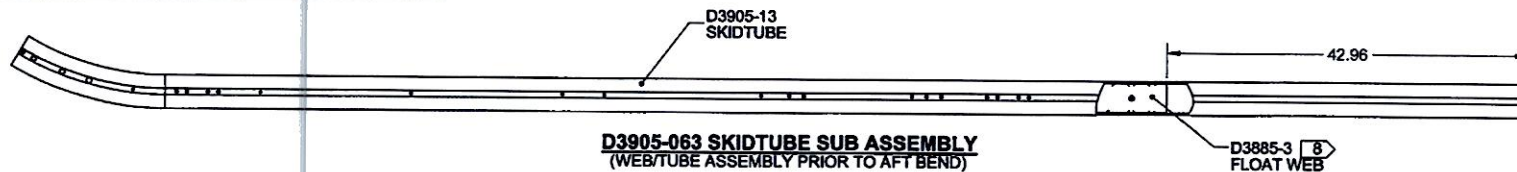
- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A
- 8) INSERT D3885-3 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/291 ADHESIVE PER DART QSI 015 AFTER BENDING. ENSURE HOLES LINE-UP
- 9) RELIEVE RIDGE FLUSH WITH SKIDTUBE FOR INSERT CLEARANCE, MAX 0.130 INTO RIDGE

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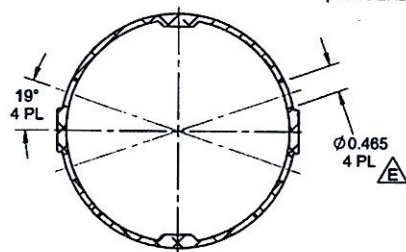
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DE APPR.	DS	A119 FLOAT SKIDTUBE ASSY	
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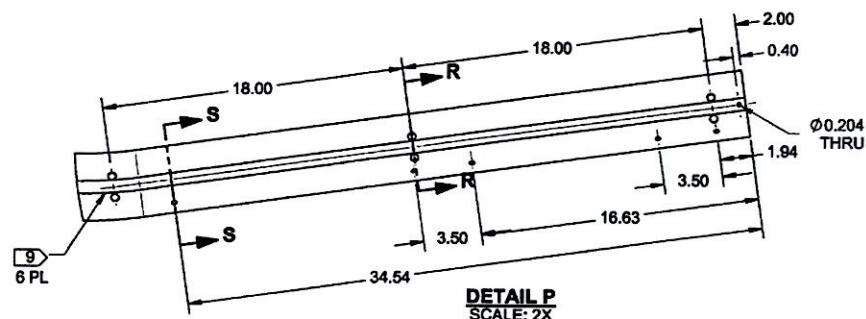
ITEM	QTY	P/N	DESCRIPTION
	X	D3905-063	SKIDTUBE SUB ASSEMBLY
1	1	D3885-3	FLOAT WEB
2	1	D3905-13	SKIDTUBE



SECTION S-S
5 PL
SCALE: 7X



SECTION R-R
3 PL
SCALE: 7X



DETAIL P
SCALE: 2X

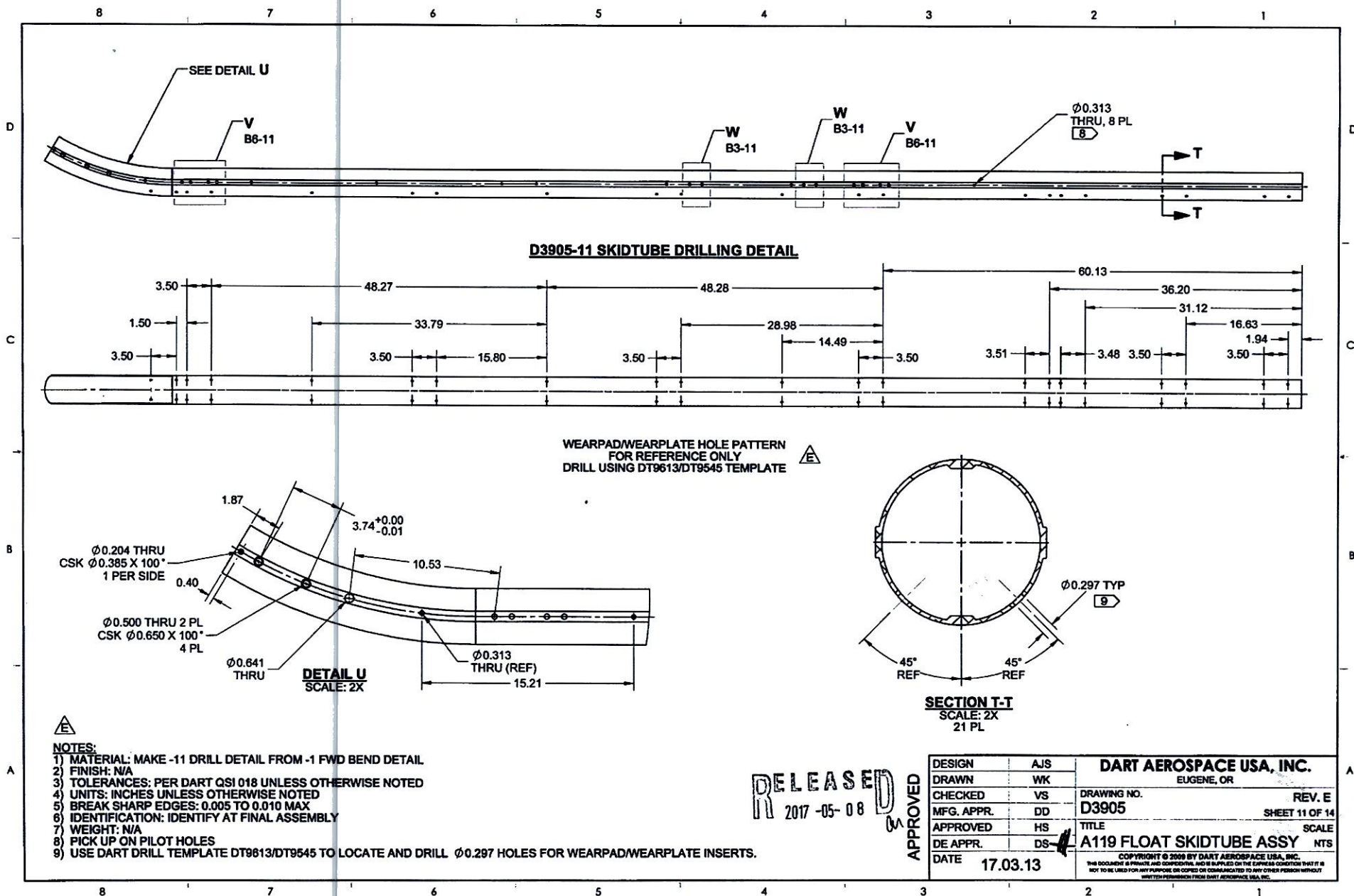
NOTES:

- 1) MATERIAL: N/A
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- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A
- 8) INSERT D3885-3 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING. ENSURE HOLES LINE-UP
- 9) RELIEVE RIDGE FLUSH WITH SKIDTUBE FOR INSERT CLEARANCE, MAX 0.130 INTO RIDGE

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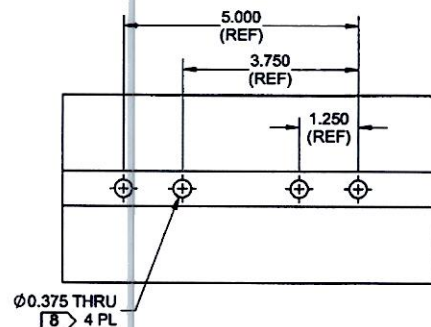
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DESIGN	AJS	DART AEROSPACE USA, INC.	
DRAWN	WK	EUGENE, OR	
CHECKED	VS	DRAWING NO.	REV. E
MFG. APPR.	DD	D3905	SHEET 10 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 FLOAT SKIDTUBE ASSY	NTS
DATE	17.03.13	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRELIMINARY AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

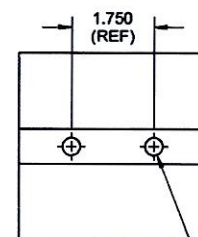


D3905-13 SKIDTUBE DRILLING DETAIL

Ø0.313
THRU, 8 PL
8



DETAIL V
SCALE 4X
2 PL



DETAIL W
SCALE 4X
2 PL

NOTES:

- 1) MATERIAL: MAKE -13 DRILL DETAIL FROM -1 FWD BEND DETAIL
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A
- 8) PICK UP ON PILOT HOLES

RELEASED
2017-05-08

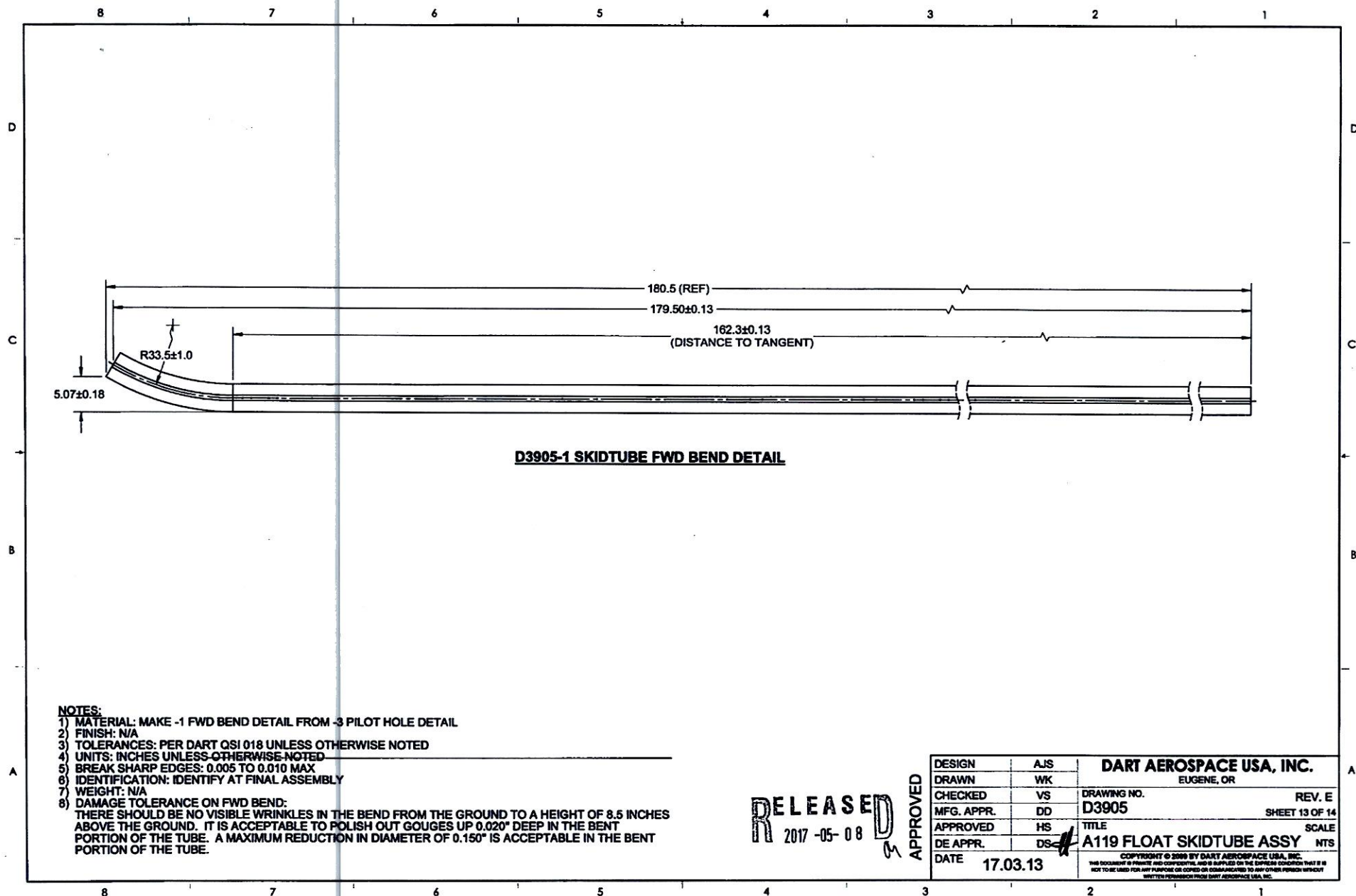
APPROVED

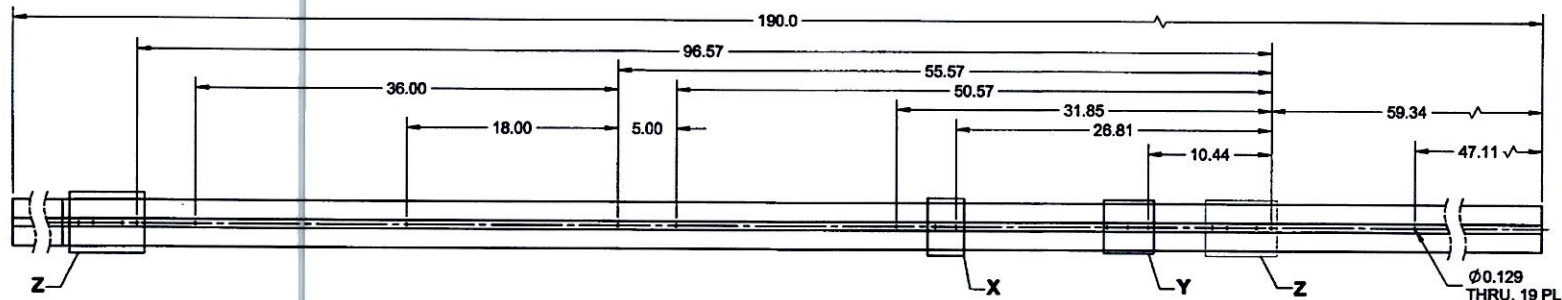
DESIGN	AJS
DRAWN	WK
CHECKED	VS
MFG. APPR.	DD
APPROVED	HS
DE APPR.	DS
DATE	17.03.13

DART AEROSPACE USA, INC.
EUGENE, OR

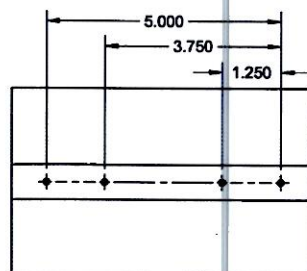
DRAWING NO. **D3905** REV. E
SHEET 12 OF 14
TITLE **A119 FLOAT SKIDTUBE ASSY** SCALE NTS

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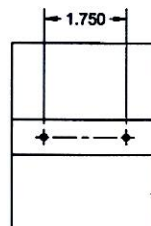




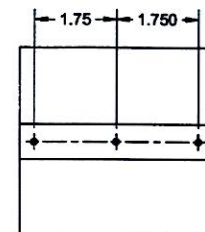
D3905-3 SKIDTUBE PILOT HOLE DETAIL



DETAIL Z
SCALE: 4X



DETAIL X
SCALE: 4X



DETAIL Y
SCALE: 4X

NOTES:

- 1) MATERIAL: MAKE FROM D2500-1-190 EXTRUSION
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A

RELEASED
2017-05-08

APPROVED

DESIGN	AJS	DART AEROSPACE USA, INC.	
DRAWN	WK	EUGENE, OR	
CHECKED	VS	DRAWING NO.	REV. E
MFG. APPR.	DD	D3905	SHEET 14 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 FLOAT SKIDTUBE ASSY	NTS
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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

OUTSTANDING PO REPRINT

Purchase Order ID PO34903

Purchase Order Date 1/11/2017

PO Print Date 6/22/2017

Page Number 1 of 3

Order From: VC-LOEB01
LOEB PACKAGING LTD
1475 STAR TOP ROAD
OTTAWA, ONTARIO K1B 3W5
CANADA

Ship To: DART AEROSPACE LTD
1270
ABERD
EEN
HAWKE
SBURY,
ON
K6A
1K7
CANAD
A

Contact Name		Buyer	Chantal Lavoie
Vendor Phone	613-746-8171	Customer POID	
Vendor Fax	613-746-2430	Customer Tax #	10127-2607
Ship To Contact		Terms	Net 30
Ship To Phone		Currency	CAD
Ship Method	Yours ppd	FOB	Destination-Collect
Ship Acct			

Line Nbr	Item ID Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable	Req Qty	Extended Price
7	139x89x35crate	Agusta Crate	6/28/2017 Yes	1.00 Each	\$1,102.00
Line Total:					\$1,102.00
8	139x89x35crate	Agusta Crate	6/28/2017 Yes	1.00 Each	\$1,102.00
Line Total:					\$1,102.00
9	139x89x35crate	Agusta Crate	7/20/2017 Yes	1.00 Each	\$1,102.00
Line Total:					\$1,102.00

PO Instructions: Procurement Quality Clauses
A000 quality clauses not required

6/22/2017



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

OUTSTANDING PO REPRINT

Purchase Order ID P034903

Purchase Order Date 1/11/2017

PO Print Date 6/22/2017

Page Number 3 of 3

Order From : VC-LOE001
LOEB PACKAGING LTD
1475 STAR TOP ROAD
OTTAWA, ONTARIO K1B 3W5
CANADA

Ship To : DART AEROSPACE LTD
1270
ABERD
EEN
HAWKE
SBURY,
ON
K6A
1K7
CANAD
A

Contact Name	Buyer	Chantal Lavoie
Vendor Phone	Customer POID	10127-2607
Vendor Fax	Customer Tax #	Net 30
Ship To Contact	Terms	CAD
Ship To Phone	Currency	FOB
Ship Method		Destination-Collect
Ship Acct		

Line Nbr	Item ID	Description/ Mfg ID	Req Date/ Taxable	Req Qty	Extended Price
12	139x89x35crate	Agusta Crate	9/12/2017 Yes	1.00 Each	\$1,102.00
Line Total:					\$2,204.00
13	139x89x35crate	Agusta Crate	10/2/2017 Yes	3.00 Each	\$3,306.00
Line Total:					\$1,102.00
Outstanding PO Total:					\$11,020.00

PO Instructions: Procurement Quality Clauses
A000 quality clauses not required

Terms & Condition of
Purchasing(Suppliers) and
Procurement Quality Clauses are an
integral part of our AS9100

Change Nbr: 8

Change Date: 6/22/2017

Work Order ID 163192

Thursday, June 22, 2017 2:38:47 PM

163192

Ship 07/28

Page 1

Item ID: D119-646-143

Accept

N9000040100

Revision ID:

Setup Start *NS1*

Item Name: AW119 Repl. Skidtube with Wearplates & Wearpads, Float Comp. - Fits LH or RH

Stop *NS2*

Start Date: 7/3/2017 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 7/24/2017 Req'd Qty: 1.00 *1*

Customer:

Reference: SCHEDULED/ SHIP 07/28

Approvals: Process Plan: [Signature] Date: JUN 22 2017 Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3905-043	E								
IIN-D119-646	D								

100 Document Control 0.00

100

DC

Doc.Control -USB or Paperwork

Memo
Photocopy bluefile & type labels per PPP D119-646-143
CHG 005

SEP 18 2017

DAS
5
8-89

110 0.00

110

Skidtubes

Skidtubes

Memo
1- Inspect Mat'l D2500-1-190 for damage
2- Ensure squareness of ends

1 & 17-06-26
D-11

United States of America
Department of Transportation - Federal Aviation Administration
Supplemental Type Certificate

Number: SR02024SE

This certificate, issued to

Dart Aerospace USA, Inc.
190 S. Danebo Ave.
Eugene, OR 97402

certifies that the changes in the type design for the following product with the limitations and conditions therefore as specified herein meet the airworthiness requirements of Part 27 of the Federal Aviation Regulations.

Original Product—Type Certificate Number:

H7EU

Make:

Agusta S.p.A.

Model:

A119 and AW119 MKII

Description of the Type Design Change: Fabrication of DART D119-646 Replacement Skidtube Installation in accordance with DART Aerospace USA, Inc. Master Document List (MDL), Document Number MDL-D119-646, Revision B, dated June 30, 2009, or later Federal Aviation Administration (FAA) approved revision; and installation of this system in accordance with Installation Instructions, DART Aerospace USA, Inc. Document Number IIN-D119-646, Revision B, dated June 29, 2009, or later FAA-approved revision. This modification must be maintained in accordance with Instructions for Continued Airworthiness (ICA), DART Aerospace USA, Inc. Document Number ICA-D119-646, Revision 1, issued June 29, 2009, or later FAA-accepted revision.

Limitations and Conditions: Approval of this change in type design applies to the above model rotorcraft only. This approval should not be extended to other rotorcraft of this model on which previously approved modifications are incorporated, unless it is determined by the installer that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that rotorcraft. A copy of this certificate and the ICA must be maintained as part of the permanent records for the modified rotorcraft.

If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: May 11, 2009

Date received: October 28, 2015

Date of issuance: August 11, 2009

Date amended:



By direction of the Administrator

[Signature]
(Signature)

[Title]
Manager, Seattle Aircraft Certification Office

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.